Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (previously presented) A method of classifying media comprising:

generating a probabilistic input-output system having at least two input parameters and having an output which has a joint dependency on said input parameters, said input parameters being associated with image-related measurements acquired from imaging textural features which are characteristic of different classes of media, said output being an identification of a media class;

imaging a medium of interest to acquire image information regarding textural features of said medium of interest, said textural features being related to structure of said medium of interest;

determining said image-related measurements from said image information; and

employing said probabilistic input-output system to associate said medium of interest with a selected said media class, including using said image-related measurements determined from said image information as said input parameters.

2. (original) The method of claim 1 wherein generating said probabilistic input-output system includes relating texture-dependent vectors (x) to media-identification outputs (y), said input parameters being parameters of said texture-dependent vectors.

3. (original) The method of claim 2 wherein generating said probabilistic input-output system includes using m an values (μ) of the reflectivities of said medium classes and standard deviations (σ) of said reflectivities as said input parameters.

4. (previously presented) The method of claim 1 further comprising setting print parameters for applying print material on said medium of interest, including basing settings of said print parameters on said output of said probabilistic input-output system.

5. (previously presented) The method of claim 1 wherein generating said probabilistic input-output system includes:

imaging a plurality of samples of each of said media classes;

calculating said image-related measurements for each of said samples that are imaged;

on a basis of said input parameters that are associated with said image-related measurements, mapping each said sample in a multi-dimensional data distribution to form a cluster-weighted model (CWM) in which joint probability densities established by said mapping are used to define probability clusters within said data distribution; and

associating said probability clusters with said media classes.

6. (previously presented) The method of claim 5 wherein said associating said probability clusters includes forming a look-up table which correlates said probability clusters with said media classes.

7. (previously presented) The method of claim 1 wherein said imaging includes projecting light onto said medium of interest at an angle of less than 45 degrees relative to an imaged surface of said medium of interest.

8. (previously presented) The method of claim 7 wherein said imaging further includes detecting surface features having dimensions of 100 μm or less.

9. (previously presented) The method of claim 1 wherein said imaging includes projecting light onto said medium of interest at an angle greater than 45 degrees relative to an imaged surface of said medium of interest, said image-related measurements being specular measurements.

10-20. (withdrawn)

21. (currently amended) A method of performing media classification with respect to a plurality of different media classes, the method comprising:

acquiring statistics about textural features for the different media classes; and

generating a probabilistic input-output system having at least two input parameters and having an output which has a joint dependency on said input parameters, said input parameters being associated with the statistics, said output being an identification of a media class.

22. (currently amended) A method of classifying a medium of interest with respect to a plurality of different media classes, the medium having <u>textural</u> ~~textual~~ features, the method comprising:

acquiring image information about the textural features of said medium;

generating statistics about the <u>textural</u> ~~textual~~ features from the acquired information; and

using a probabilistic input-output model to discriminate the medium against the media classes, including using the statistics as input parameters to the model.

23. (previously presented) A system for performing the method of claim 22.

24. (previously presented) A printer for performing the method of claim 22.